WORKSHEET

F Economic and Operational Feasibility

Use this worksheet to evaluate the economic and operational feasibility of the waste reduction options under Consideration.

This table in this worksheet will enable you to examine more closely the potential Waste reductions options that passed your initial screening in worksheet E. Much of the information requested on this worksheet involves business judgement concerning such factors as the effect each option is likely to have on productivity and the ease of implementation. You may want to consult with department managers on some issues. Certain questions may not be applicable to all waste reduction option

For the economic evaluation sections of this worksheet, refer to purchasing records, disposal records, waste sort or facility walk-through data, and interviews with company employees, as well as information recorded on earlier worksheet Consult company purchasing officals, financial advisor, or department managers as necessary.

Fill out a separate workksheet for each waste reduction option to be evaluated copying the forms as needed. Use the last page of this worksheet to summarize the economic, operational, and intangible factors associated with waste reduction options under evaluation

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Waste Reduction Option _____

1 Operational Factors

A. Could this option improve or reduce product or service quality? How?

B. **Could this option improve or reduce productivity? How?**

C. Will additional staff or time be required to implement, operate, or maintain this option? How many'? What would additional staff be required to do?

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D. Can the option be Implemented within the existing facility setup, or are adjustments needed (such as additional space or a change in layout) to accommodate the option? If so, what

E. WIll any new equipment be needed? If so, what?

F. Are there companes willing to purchase collected recyclable materials? List area buyers or haulers willing to collect material.

G. Can reusable materials be donated to a local community group or listed with a materials exchange?

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2 Economic Factors

A. Capital Costs for This Option

Equipment Purchased (e.g., baler, containers)

_____ $ _____

_____ $ _____

_____ $ _____

Facility/Storage Preparation (e.g., grading a site for composting) $ _____

Installation/Utility Connection (for equipment such as compactors) $ _____

Initial Staff Training $ _____

Initial Promotional and Educational Materials $ _____

Other (specify) _____ $ _____

_____ $ _____

_____ $ _____

$ _____

Total Capital Costs

B. Annual Operating Costs for This Option

Materials and Supplies $ _____/year

Operation & Maintenance $ _____/year
(e.g., labor, equipment, storage space, service contracts, utility charges)

Transportation $ _____/year

Ongoing Staff Training $ _____/year

Ongoing Promotion and Education $ _____/year

Other (specify) _____ $ _____/year

_____ $ _____/year

_____ $ _____/year

$ _____

Total Annual Operating Costs

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C. Avoided Waste Removal Costs for this Option

Use the table below to calculate the annual avoided removal costs for this waste reduction option. Using data from the waste sort, purchasing records, and interviews with personnel as a starting point, estimate the annual amount of waste this option will reduce. If necessary, use the conversion factors listed in Appendix D to convert the amount of waste material being reduced (Column 3 below) to the same unit of measure (e.g., cubic yards or tons) as your waste removal cost.

Waste Reduction Activity	Waste Material Being Reduced	Amount of Waste Reduced per Time Period	Annual Amount of Waste Reduced (X Annual Multiplier =)	Waste Removal Cost (x)	Annual Avoided Removal Cost (=)
Replace single-use plates with dishes in cafeteria	*Single-use plates*	*5 cubic yards per week*	*260 cubic yards per year*	*$3 per cubic yard*	*$780*

D. Avoided Purchase Costs for this Option

If the waste reduction option under consideration will result in the opportunity to purchase fewer supplies or materials, use the formula below to calculate the annual avoided purchase costs for this option.

Type of Material _____

_____ **x** _____ = $ _____

Annual reduction in purchasing *[In same unit of measure as the unit price]* | Unit price | **Annual Avoided Purchase Costs**

E. Annual Revenues for this Option

Use the formula below to estimate annual revenues for this option (if any).

_____ + _____ + _____ = $ _____

Sale of recyclable materials | Sale of items in a materials exchange | Sale of compost | **Total Annual Revenues**

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F. Net Savings for This Option

Use the formula below to calculate the total annual savings for this option,

_____	+	_____	+	_____	=	$	_____
Annual avoided removal costs *[from Step 2-C]*		**Annual avoided purchase costs** *[from Step 2-D]*		**Annual revenues** *[from Step 2-E]*			Total Annual Savings

G. Net Annual Cost or Savings for This Option

Subtract the total annual operating costs from the total annual savings to arrive at the net annual cost or savings resulting from this waste reduction option (exclusive of capital costs),

_____	_____	$ _____
Total annual savings *[from Step 2-E]*	**Total annual operating costs** *[from Step 2-B]*	**Annual Net Costs or Savings**

H. Interpreting Net Costs

If the figure arrived at in 2-F is positive, proceed to 2-1,

If the figure arrived at in 2-F is negative, this option will cost more to implement than it will save, First, review the numbers to ensure you have accounted for all potential costs and savings. If the result is the same, you will need to determine whether this option belongs in your waste reduction program. If this option has other intangible benefits (such as improved public relations and employee morale), you might consider including it. In addition, be sure to consider the program as a whole. This option might make sense if the other components of your program will result in large enough savings to offset the costs of this option, resulting in overall program savings.

If you decide it should not be included in your waste reduction program at this time, you might want to make a note to revisit this option if conditions change. For example, if the market for a recyclable material improves significantly or equipment costs decline due to technological advances, this option might become cost-effective.

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1. Payback Period for This Option

Payback period is one of many ways of measuring the economic feasibility of the options under consideration. The payback period measures the amount of time needed for the cumulative revenues or savings resulting from the waste reduction program to equal the initial investment. (This calculation is only relevant when annual savings or revenues exceed annual costs.) If your company uses other measures of investment worthiness (internal rate of return, net present value, etc.) you may wish to use one of these methods instead of calculating the payback period.

Calculate the payback period using the formula below.

Total capital costs *[from Step 2-A]*	÷	Annual net savings *[from Step 2-F]*	=	**Payback Period (Years)**

Note: If the payback period is longer than the useful life of any of the equipment purchases listed in 2-A, add the costs of replacing this equipment to 2-A and recalculate the payback period.

3 Other Factors

Aspects of the options that cannot easily be expressed using the Economic and Operational Feasibility tables and formulas may be explained below. (These intangible factors include improved working environment, corporate image, employee and customer satisfaction, community relations, and recognition.) List the intangible advantages and drawbacks associated with implementing this option.

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Economic and Operational Feasibility

4 Summary of Waste Reduction Options

Use this table to summarize the economic and operational feasibility of your waste reduction options.

Option	Projected Amount of waste reduced	Annual Net Cost or savings	Payback Period	Operational and Intangible Advantages and Drawback
Recycling office paper	*200 reams of paper*	*$2,000 savings*	*Less than 1 year*	*Strong local paper recycling market, easy to implement, good for employee involvement*